

What Is Claimed Is:

Subt A1
1 A high throughput toxicology screening method in which at least 10 different
5 compound compositions are simultaneously assayed for toxicity, said method comprising:
simultaneously assaying at least 10 different compound compositions for toxicity,
wherein each of said at least 10 different compound compositions is assayed for toxicity
by:

(a) contacting said compound composition with a plurality of non-mammalian
multi-cellular organisms; and

10 (b) determining the effect of said compound composition on said non-mammalian
multi-cellular organisms.

2. The screening method according to Claim 1, wherein said plurality of non-
mammalian multi-cellular organisms ranges from about 10 to 1000.

15 3. The screening method according to Claim 1, wherein said non-mammalian multi-
cellular organisms have a rapid generation time.

4. The screening method according to Claim 1, wherein said non-mammalian multi-
20 cellular organisms are small.

5. The screening method according to Claim 1, wherein said non-mammalian multi-
cellular organisms are characterized by the presence of differentiated organs and tissues.

Subt A2
25 6. A high throughput toxicology screening method in which at least 10 different
compound compositions are simultaneously assayed for toxicity, said method comprising:
simultaneously assaying at least 10 different compound compositions for toxicity,
wherein each of said at least 10 different compound compositions is assayed for toxicity
by:

5

- (a) contacting said compound composition with a population of from about 10 to 1000 small non-mammalian multi-cellular organisms having a rapid generation time and differentiated organs and tissues; and
- (b) determining the effect of said compound composition on said non-mammalian multi-cellular organisms.

7. The method according to Claim 6, wherein said population is characterized by producing at least 100 progeny per day.

10 8. The method according to Claim 6, wherein at least 100 compound compositions are tested simultaneously.

9. The method according to Claim 6, wherein at least 1000 compound compositions are tested simultaneously.

15

10. The method according to Claim 6, wherein said multi-cellular organism is an insect.

11. The method according to Claim 10, wherein said insect is a fly.

20

12. A high throughput antitoxin screening method in which at least 10 different candidate antitoxin compound compositions are simultaneously assayed for antitoxin activity, said method comprising:

simultaneously assaying at least 10 different candidate antitoxin compound compositions for antitoxin activity, wherein each of said at least 10 different candidate compound compositions is assayed for antitoxin activity by:

25

- (a) contacting said candidate compound composition with a population of from about 10 to 1000 small non-mammalian multi-cellular organisms

having a rapid generation time and differentiated organs and tissues which have been contacted with a toxin; and
(b) determining the effect of said compound composition on said non-mammalian multi-cellular organisms.

5

13. The method according to Claim 12, wherein said population is characterized by producing at least 100 progeny per day.

14. The method according to Claim 12, wherein at least 100 candidate compound compositions are tested simultaneously.

10

15. The method according to Claim 6, wherein at least 1000 candidate compound compositions are tested simultaneously.

15

16. The method according to Claim 6, wherein said multi-cellular organism is an insect.

17. A database of toxicity profiles, said database comprising a plurality of toxicity profiles for a plurality of compounds.

20

18. A database according to Claim 17, wherein said database is prepared by compiling toxicity profiles generated according to the method of Claim 1.

19. The database according to Claim 17, wherein said database is present on a computer readable medium.

25

20. The database according to Claim 17, wherein said database comprises at least 10 different toxicity profiles.

20